

### CLAIMS

1. An identification system comprising

a reader including a transmitter for transmitting a signal

and a plurality of transponders, each transponder including a receiver

5 for receiving the reader signal and a transmitter for generating a transponder signal, wherein on recognising a transponder signal from a transponder the reader immediately issues a mute instruction, muting all other active transponders and passing control to the said transponder, without the need for a specifically timed acknowledgement to the said controlling transponder.

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2. An identification system as claimed in Claim 1, wherein the mute instruction comprises a modulation of the reader signal.

3. An identification system as claimed in Claim 1, wherein the reader issues an  
15 acceptance instruction after the controlling transponder signal has been successfully received by the reader.

4. An identification system as claimed in Claim 1, wherein the transponder includes a random wait timer which triggers the transmission of the transponder signal  
20 after a random wait cycle has been completed.

5. An identification system as claimed in Claim 1, wherein the reader issues a disabling instruction after the controlling transponder signal has been successfully received by the reader.

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6. A method of identifying a plurality of transponders comprising

transmitting a reader signal, and

each transponder receiving the reader signal,

wherein on recognising a transponder signal from a transponder the reader  
30 immediately issues a mute instruction, muting all other active transponders and

passing control to the said transponder, without the need for a specifically timed acknowledgement to the said controlling transponder.

7. A method as claimed in Claim 6, wherein an acceptance instruction is issued  
5 by the reader after the controlling transponder signal has been successfully received.

8. A method as claimed in Claim 6, wherein the transmission of the transponder signal by each transponder is triggered after a random wait cycle has been completed.

10 9. A method as claimed in Claim 6, wherein if a mute instruction is received by a transponder before it has begun transmitting its transponder signal, the random wait cycle of said transponder is halted.

10. A method as claimed in Claim 6, wherein if a mute instruction is received by a  
15 transponder before it has begun transmitting a transponder signal, at the end of the random wait cycle the transponder is inhibited from transmitting the transponder signal.

11. A method as claimed in Claim 6, wherein a disabling instruction is issued by  
20 the reader after the controlling transponder signal has been successfully received by the reader.

12. A method as claimed in Claim 6, wherein the controlling transponder is  
25 permanently disabled by a disabling instruction.

13. A method as claimed in Claim 6, wherein when a transponder detects a mute instruction the random wait cycle is paused.

14. A transponder comprising receiver means for receiving a reader signal,  
30 transmission means for transmitting a transponder signal containing data which

identifies the transponder whereby in a set of transponders, two or more transponders may transmit their transponder response signals in response to receiving the reader signal, wherein the transponder is provided with control means, whereby on recognising a mute instruction in the reader signal, all active transponders in the set  
5 but one are muted and control is passed to said one transponder, without the need for a specifically timed acknowledgement to the said controlling transponder.

15. A transponder as claimed in Claim 14, wherein the mute instruction from the reader comprises a modulation of the reader signal and the transponder has detection  
10 means for recognising the modulation.

16. A transponder as claimed in Claim 14, wherein the controlling transponder is permanently disabled by a disabling instruction from the reader after the controlling transponder signal has been successfully received by the reader.

15 17. A transponder as claimed in Claim 14, wherein the controlling transponder is disabled for a predetermined period of time after the disabling instruction is issued.

20 18. A transponder as claimed in Claim 14, wherein the controlling transponder is disabled by the disabling instruction until it is reset.

25 19. An integrated circuit for use in a transponder, comprising receiver means for receiving a reader signal, transmission means for transmitting a transponder signal containing data which identifies the transponder whereby in a set of transponders, two or more transponders may transmit their transponder response signals in response to receiving the reader signal, wherein there is provided control means, whereby on recognising a mute instruction in the reader signal, all active transponders in the set but one are muted and control is passed to said one transponder, without the need for a specifically timed acknowledgement to the said controlling transponder.

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20. An integrated circuit as claimed in Claim 19, wherein in the mute instruction from the reader comprises a modulation of the reader signal and the integrated circuit has detection means for recognising the modulation.

5 21. An integrated circuit as claimed in Claim 19, wherein the controlling transponder is permanently disabled by a disabling instruction from the reader after the controlling transponder signal has been successfully received by the reader.

10 22. An integrated circuit as claimed in Claim 19, wherein the controlling transponder is disabled for a predetermined period of time after the disabling instruction is issued.

15 23. An integrated circuit as claimed in Claim 19, wherein the controlling transponder is disabled by the disabling instruction until it is reset.

20 24. A reader comprising transmitter means for transmitting an interrogation signal to at least one transponder at a time when at least one other transponder may transmit in response to the interrogation signal and receiver means for receiving a response signal from a transponder, wherein on recognising a transponder signal from the transponder the reader immediately issues a mute instruction, muting all other active transponders, and passing control to said transponder, without the need for a specifically timed acknowledgement to the said controlling transponder.

25 25. A reader as claimed in Claim 24, wherein the mute instruction comprises a modulation of the reader signal.

30 26. A reader as claimed in Claim 24, wherein the reader issues an acceptance instruction after the controlling transponder signal has been successfully received by the reader.